Maryland Commission on Climate Change

April 20, 2020

Agenda Today

1. Welcome and Introduction from Secretary Grumbles (5 minutes)

2. Welcoming New Commissioners and Workgroup Members (5 minutes)

3. Public Comment (20 minutes)

4. Commission Business During COVID-19 (20 minutes)

5. Greenhouse Gas Reduction Act Plan: Commission Input and Process for Finalizing (45 minutes)

6. Workgroup Updates and 2020 Workplan Priorities (20 minutes)

7. Other Business (5 minutes)

Commission Business during Crisis

- All meetings are videoconference/webinar.

- Work continuing as scheduled.

- **MDE & UMD provided white paper on emissions.**

Questions for Commissioners:

How can the MCCC and WGs best maintain climate progress during the crisis?

What else can agencies do to help?

GGRA Final Plan Process

Timeline is uncertain, given COVID-19 Crisis.

Proposed Timeline:

April 21 (tomorrow): Draft Plan Comments Due

May and June: Policy Analysis by Agencies & MWG

Summer: MDE presents Plan Revisions to Commission

Fall: Commission Feedback on Revisions

End of Year: MDE Publishes Final Plan
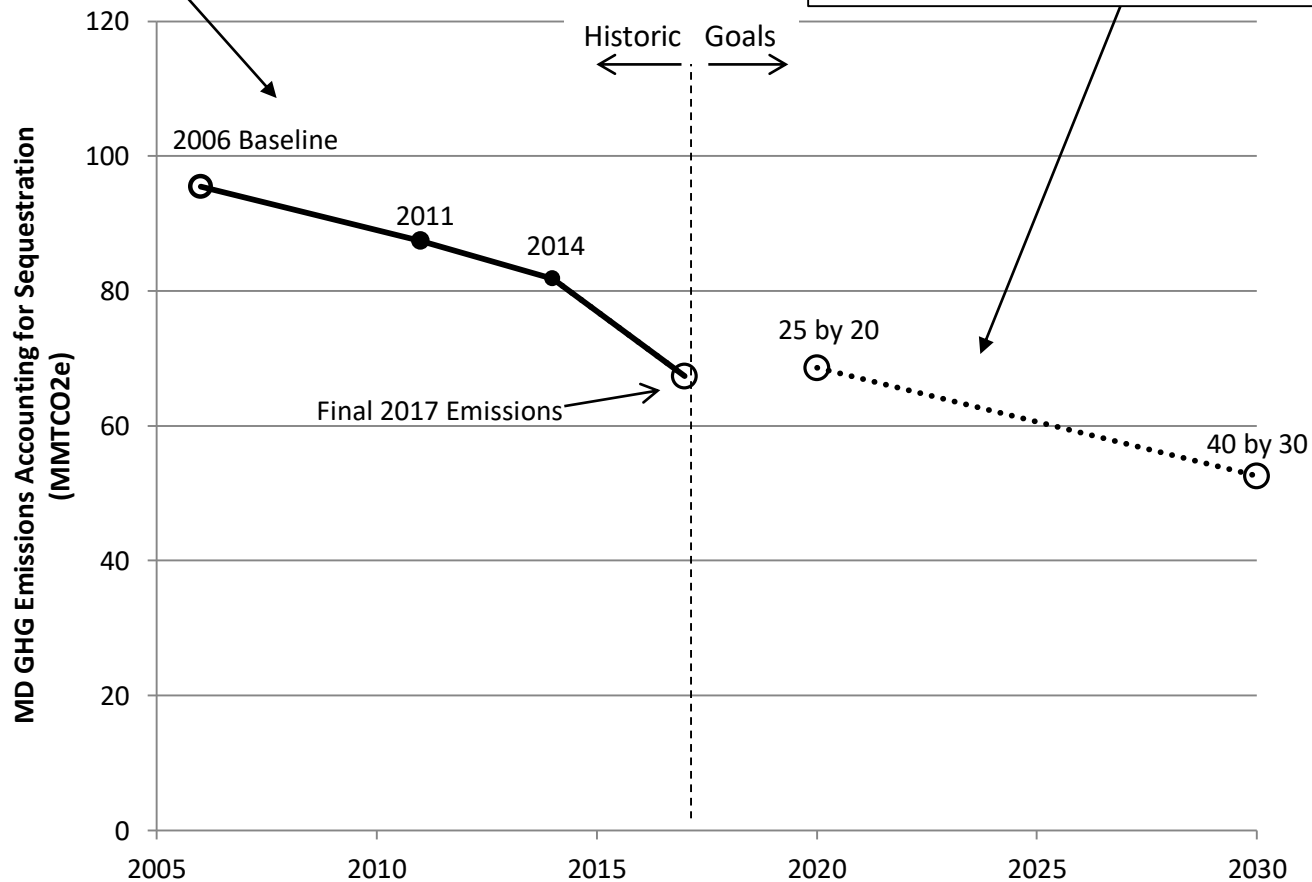
Reminder: Draft Plan

- MDE released Draft Plan for comment last October

- Achieves 40-by-30 goal & identifies future measures for 80-by-50

- Positive economic impact & substantial public health & climate benefits

- MDE, agencies, consultants updating analysis with MWG for Final Plan

- Posted at mde.maryland.gov/climatechange

Reminder: Draft Plan

MDE's **Inventory** estimates emissions that have occurred.

The **GGRA** requires MDE to develop a plan to reduce future emissions.

Historic ← | → Goals

2006 Baseline

2011

2014

Final 2017 Emissions

25 by 20

40 by 30

MD GHG Emissions Accounting for Sequestration (MMTCO2e)

Maryland greenhouse gas emissions, accounting for sequestration. Note favorable weather drove additional reductions in 2017.

Reminder: Draft Plan

The GGRA requires MDE to develop a plan to meet the GHG goals. That plan draws upon existing programs across all levels of government, and new state programs.
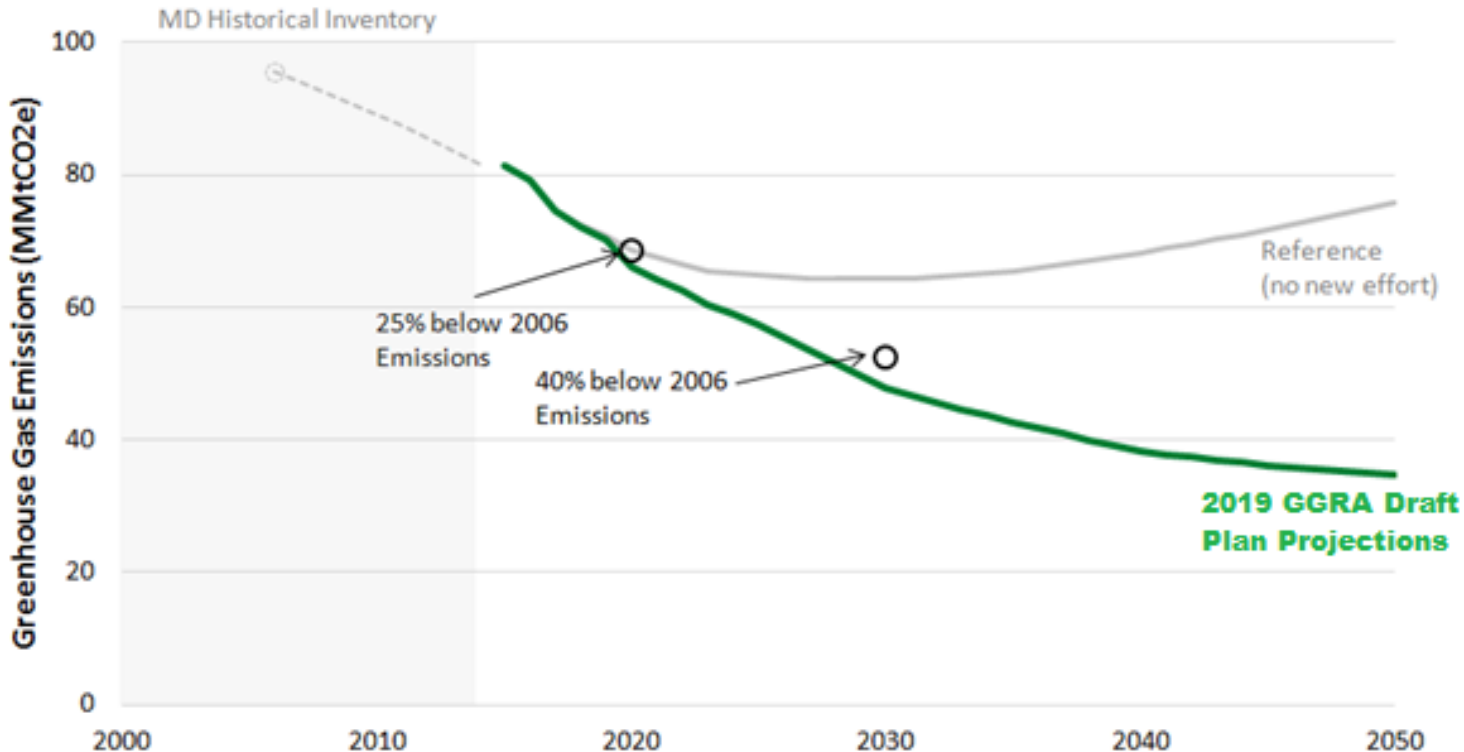
Maryland greenhouse gas emissions, accounting for sequestration. MDE projections from 2019 GGRA Draft Plan.

Reminder: Draft Plan Major Mitigation Programs

Electricity Supply
Renewable Portfolio Standard (current)
Clean and Renewable Energy Standard (proposed)
Regional Greenhouse Gas Initiative (RGGI)

Transportation
Public Transit & other infrastructure
Electric Vehicles: Clean Cars & ZEV Mandate
50% ZEV Transit Buses by 2030
Smart Growth & Compact Development
Transportation and Climate Initiative (TCI) could
fund & enable other measures.

Building Energy Use
EmPOWER Maryland
Compact Development
State Building Efficiency EO

Short-lived Climate Pollutants
HFC regulation
Methane regulation
Sustainable Materials Mgmt

Carbon Sequestration
Forest Management Programs
Healthy Soils Program

Reminder: Draft Plan
Economic, Health, & Climate Benefits

The *2019 GGRA Draft Plan* achieves the 2030 goal with significant benefit to the state's economy.

MD impact relative to Reference Case	Through 2030	Through 2050
Average job impact*	+ 11,649 job-years	+ 6,703 job-years
GDP Impact**	+ $ 11.54 billion	+ $ 18.63 billion
Personal Income Impact**	+ $ 10.04 billion	+ $ 15.67 billion
Public Health Benefit (Avoided Mortality)**	+ $ 0.74 billion	+ $ 4.79 billion
Climate Change Benefit**	+ $ 4.30 billion	+ $ 27.11 billion

* Average number of job-years created or sustained each year.
** 2018 Dollars, Cumulative, Net Present Value using 3% discount rate.
Climate benefit evaluated using Federal Social Cost of Carbon (2015 Update)

Questions for Commissioners:

How can MDE and agencies best incorporate Commission input during plan finalization?

What are highest priority mitigation pathways for MDE to analyze in the Final Plan?

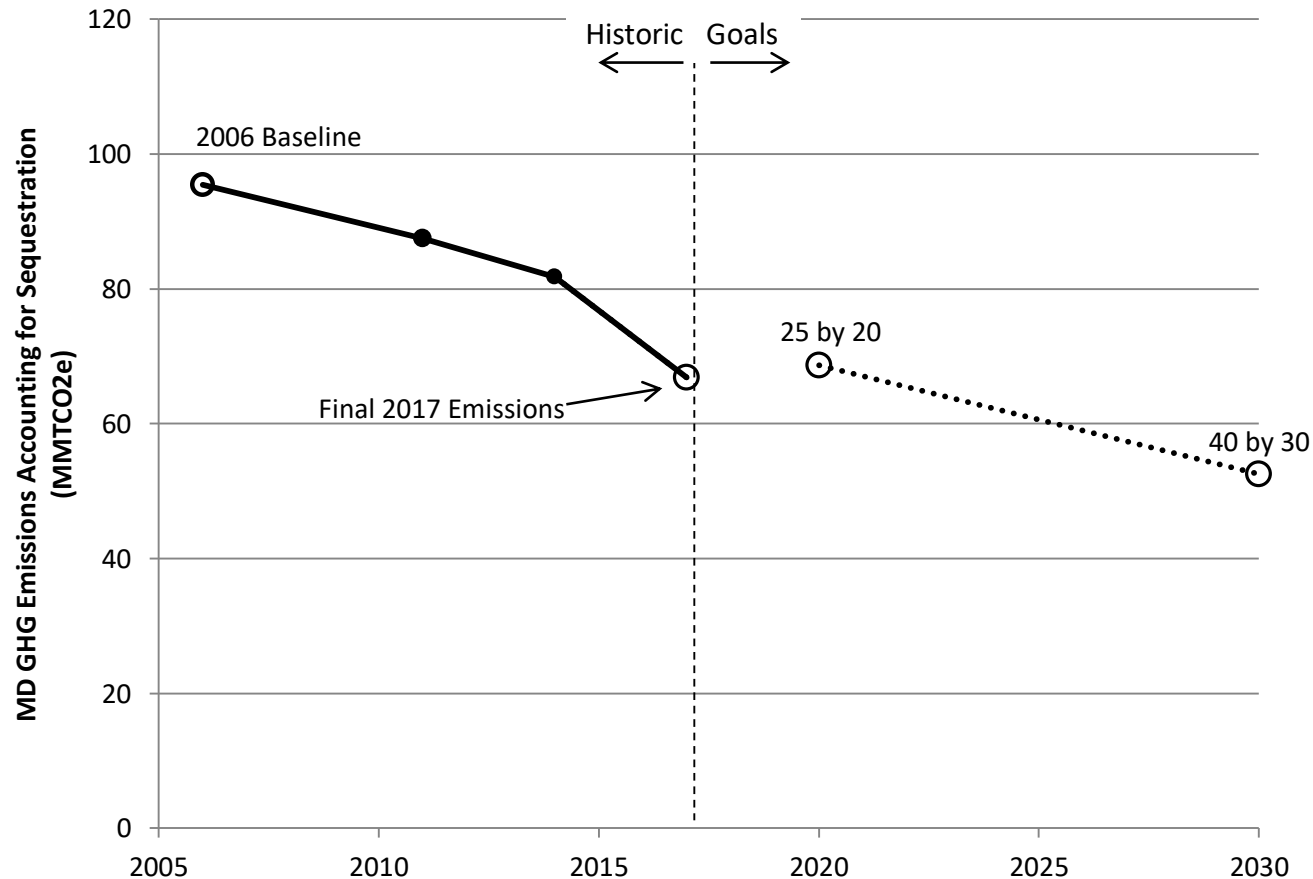(MWG is deliberating on a MWG-specified scenario)

The Greenhouse Gas Reduction Act

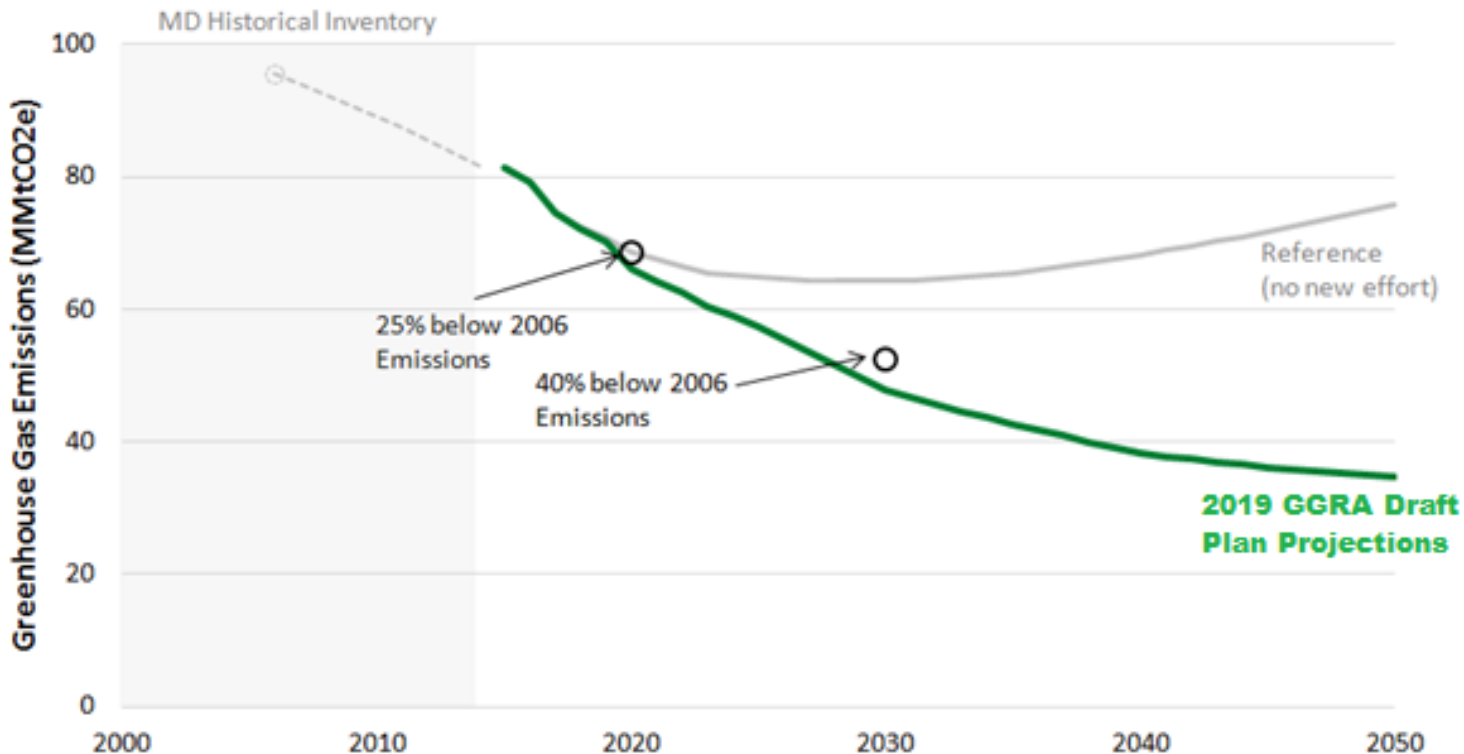Maryland Law ("GGRA"): Reduce GHGs 25% by 2020 and 40% by 2030

Maryland greenhouse gas emissions, accounting for sequestration. Note favorable weather drove additional reductions in 2017.

The GGRA Plan

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Maryland greenhouse gas emissions, accounting for sequestration. MDE projections from 2019 GGRA Draft Plan.

Major Mitigation Programs

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EmPOWER Maryland
Compact Development
State Building Efficiency EO

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Methane regulation
Sustainable Materials Mgmt

Carbon Sequestration
Forest Management Programs
Healthy Soils Program

Electricity Supply Programs

Electricity strategy: incentivize clean energy and cap emissions from fossil energy.

- CARES
  - Bill proposed for this session; example impacts in the *2019 GGRA Draft Plan*
  - Builds upon existing RPS; 100% Clean Electricity by 2040

- RGGI
  - Carbon cap on power plants and state investment in clean energy (10 states participate)
  - Growing to more states: NJ renewed participation, VA promulgated a reg (on hold), and PA drafting reg now.
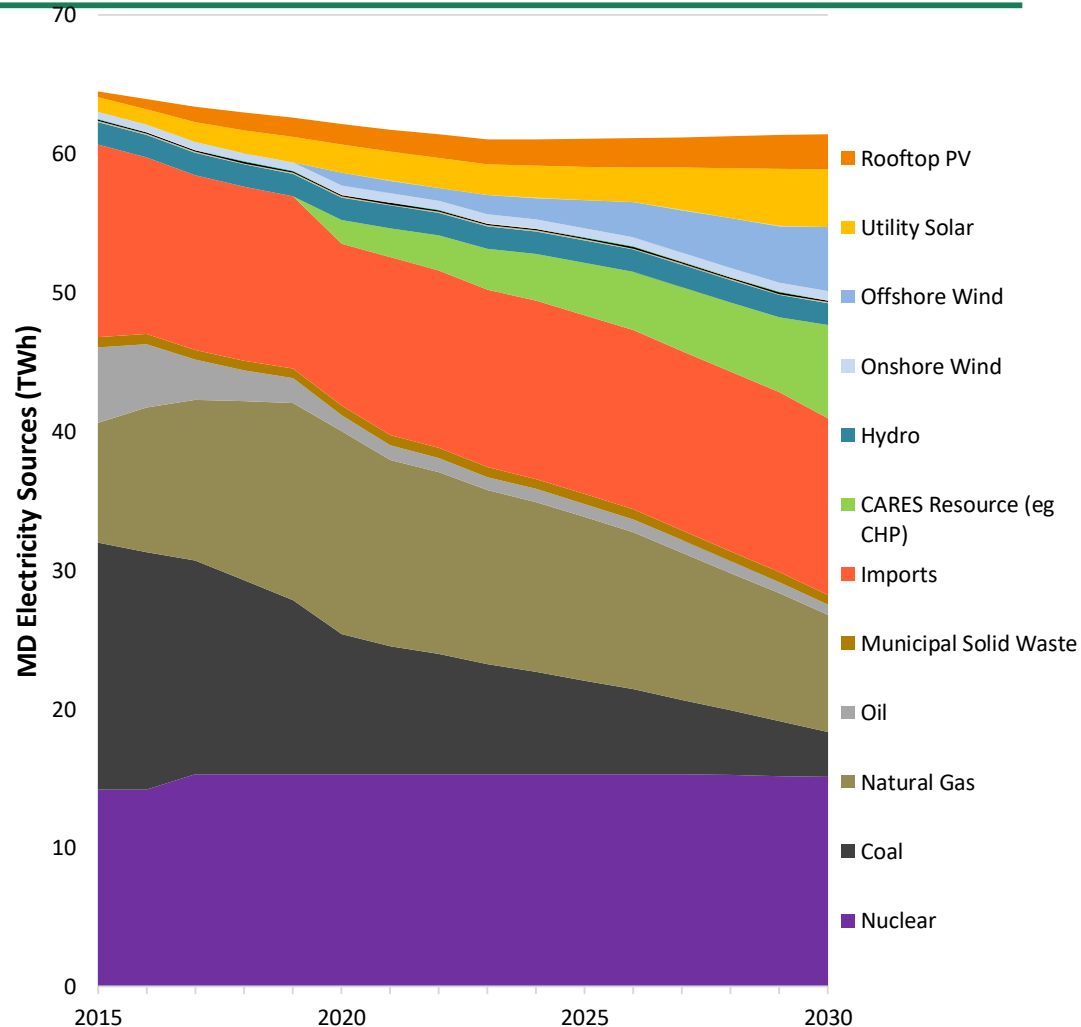

Maryland electricity generation and imports in GGRA Draft Plan through 2030. CARES and RGGI reduce fossil generation and increase clean & renewable generation. **Analysis assumes no new nuclear or carbon capture before 2030**

Buildings Programs

Buildings strategy: use efficiency to counteract growth & convert heating systems to run on increasingly clean electricity.

- Efficiency:
  - EmPOWER beyond 2023
  - Achieve State Building Efficiency Goal
  - Achieve Compact Development Goal

- Electrification:
  - Increase use of efficient electric heat pumps for building heat, perhaps using EmPOWER incentives.
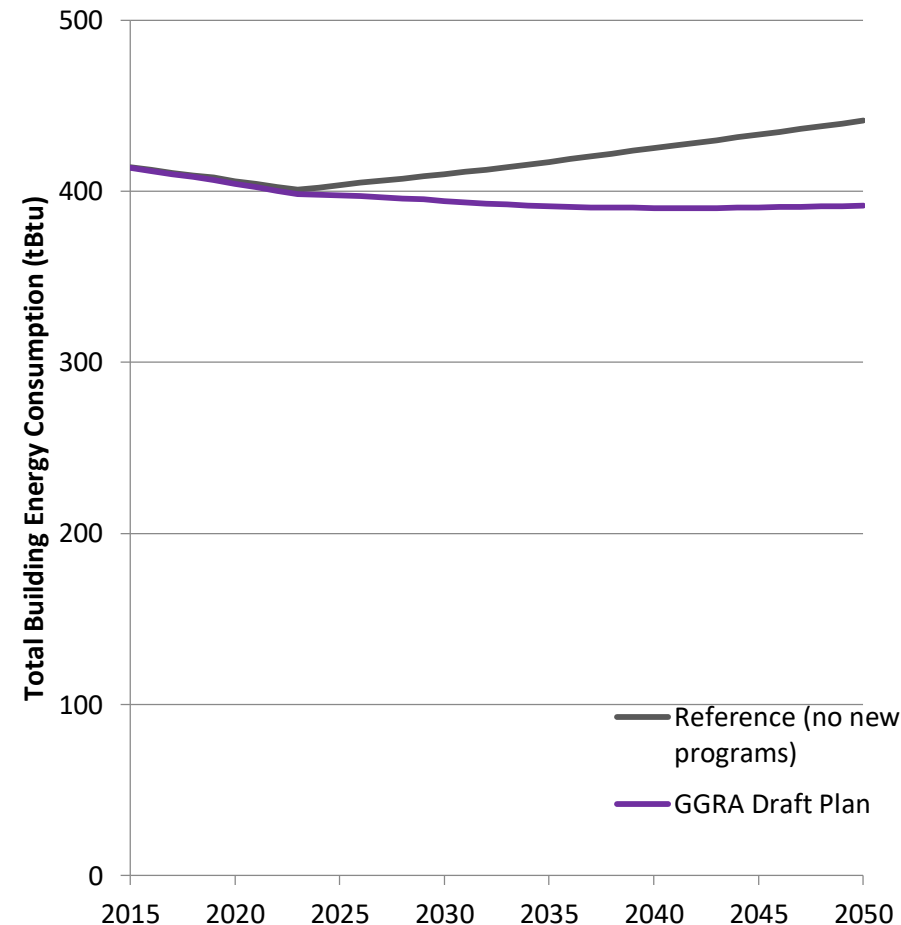
Transportation Programs

Transportation strategy:

Reduce vehicle miles traveled and **deploy electric vehicles** that run on increasingly clean electricity

- Transit Investments
- Intercity Transportation
- Active Transportation (e.g., bike lanes)
- Compact Development

- Clean Cars Program & ZEV mandate
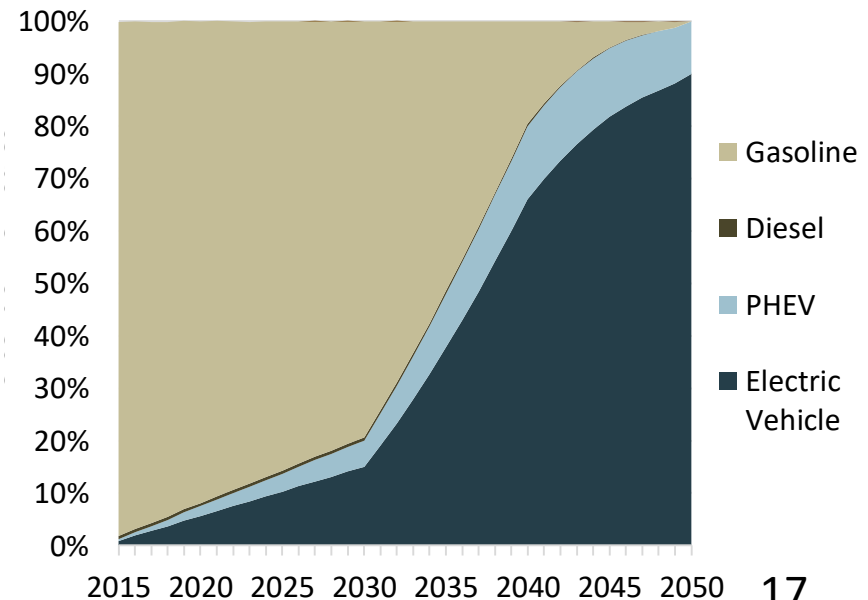- 50% ZEV Transit Buses by 2030
- Transportation and Climate Initiative

Light Duty Vehicle Miles Traveled

Reference (no new programs)

GGRA Draft Plan

Light Duty Auto Sales

Gasoline
Diesel
PHEV
Electric Vehicle

17
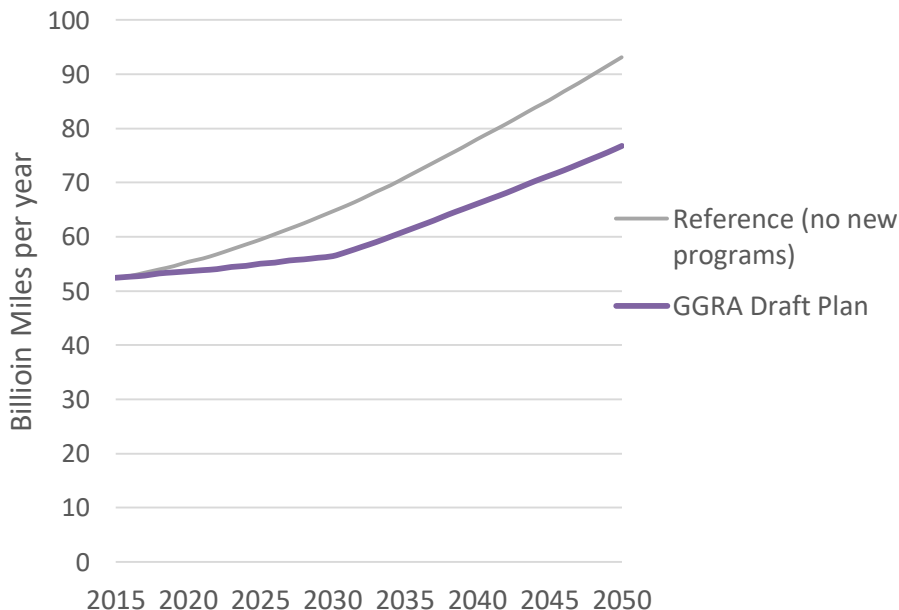
Sequestration Programs

Forest management, tree planting, and Healthy Soils programs (DNR & MDA) accelerate carbon sequestration in forests and agricultural soils, adding benefit on top of emission reduction programs.
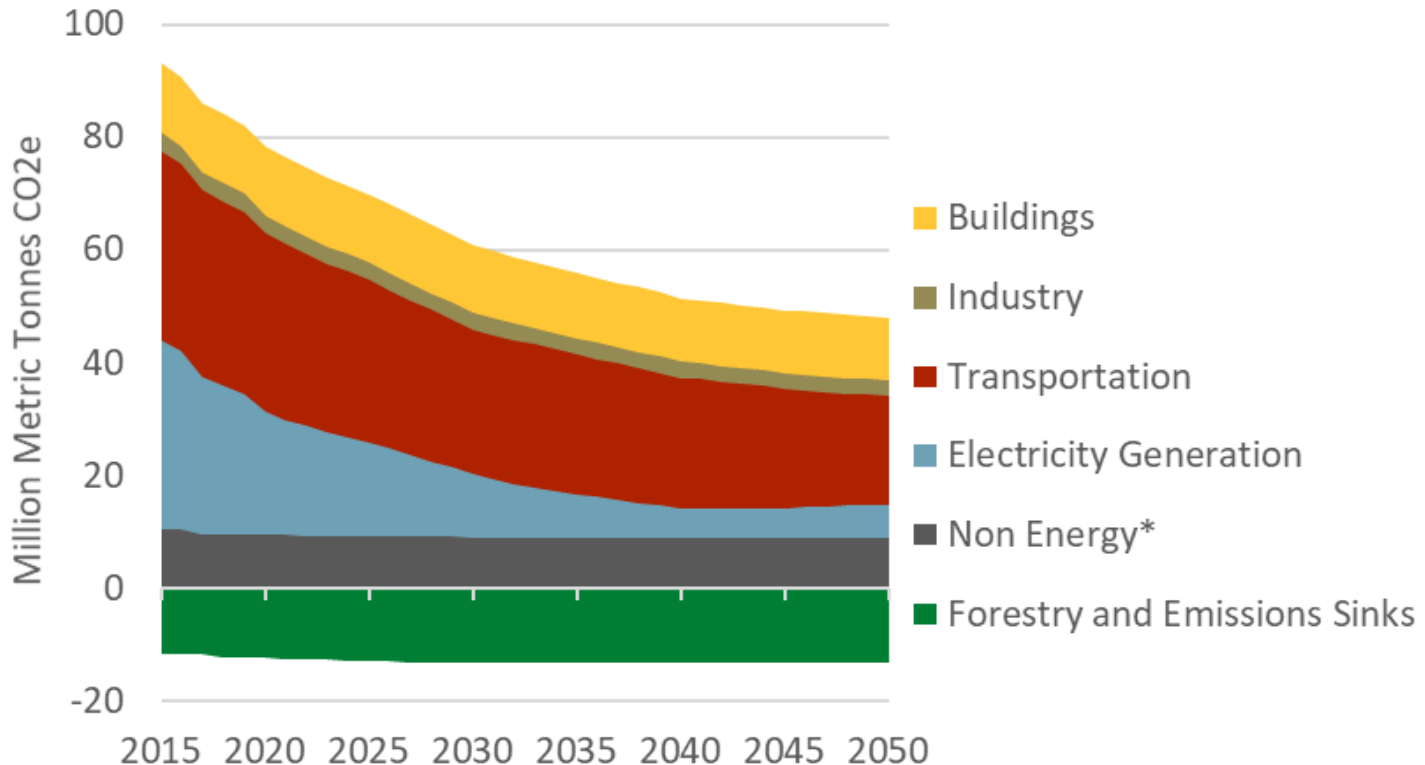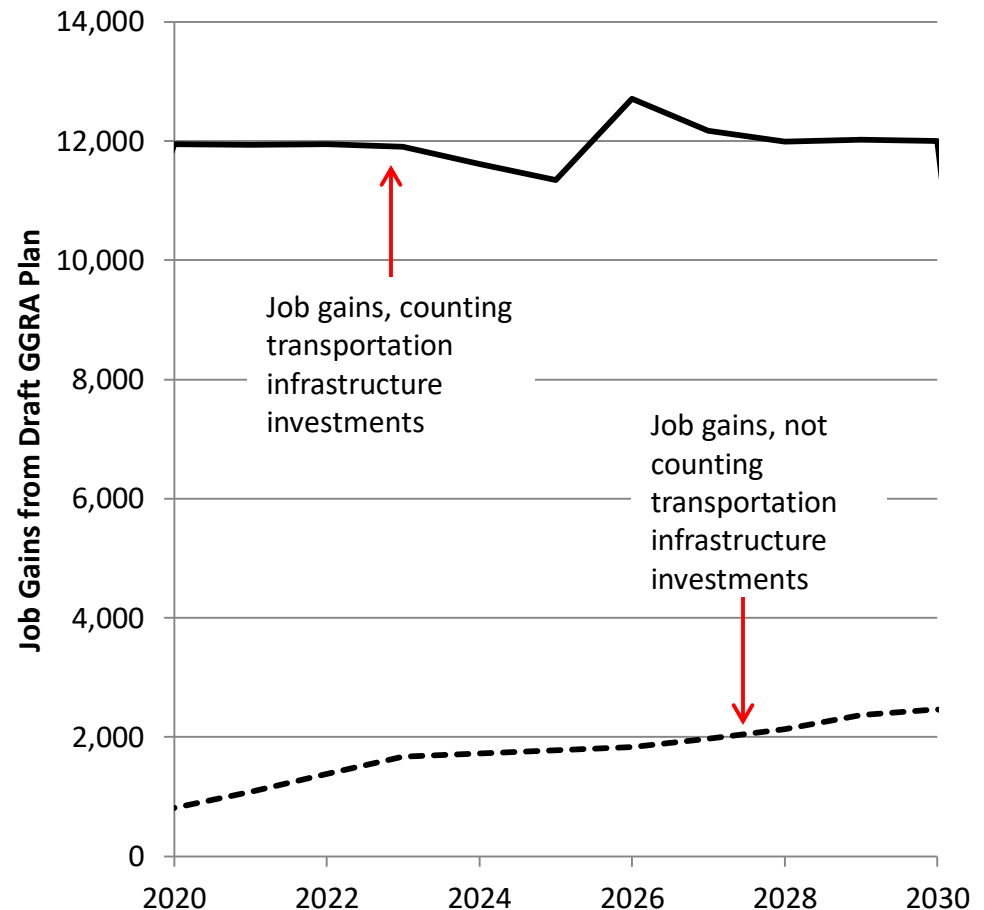

*Non Energy includes Agriculture, Waste Management, Industrial Process and Fossil Fuel Industry.

GGRA Draft Plan Employment Results

- GGRA requires positive economic impacts.

- The Draft Plan drives substantial job gains.

- Almost all of MD's fossil fuel comes from out of state.

- Investments that reduce fossil fuel consumption drive positive impacts for MD's economy.

Job Gains from Draft GGRA Plan

Job gains, counting transportation infrastructure investments

Job gains, not counting transportation infrastructure investments

Large transportation projects drive substantial job gains in the near-term; investments in in-state clean energy and fuel-saving measures provide more modest underlying gains. (Transportation gains dependent on Federal funding)

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Economic, Health, & Climate Benefits

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Addressing Uncertainty

- What if:
  - The Federal government rolls back vehicle standards?
  - Consumer adoption of EVs is half of what we modeled?
  - Consumer adoption of efficient appliances is half of what we modeled?
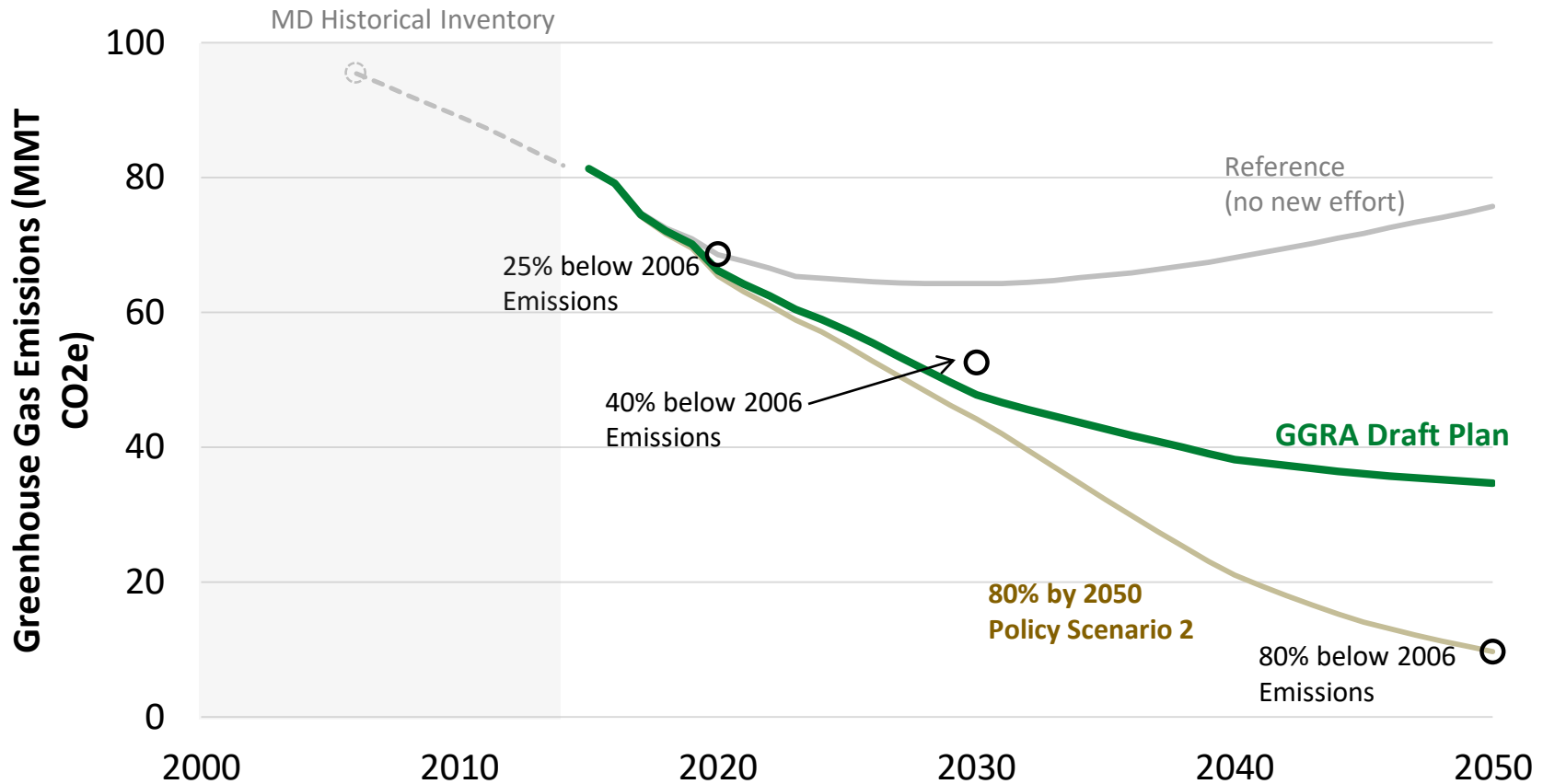 - All of those things happen at once?
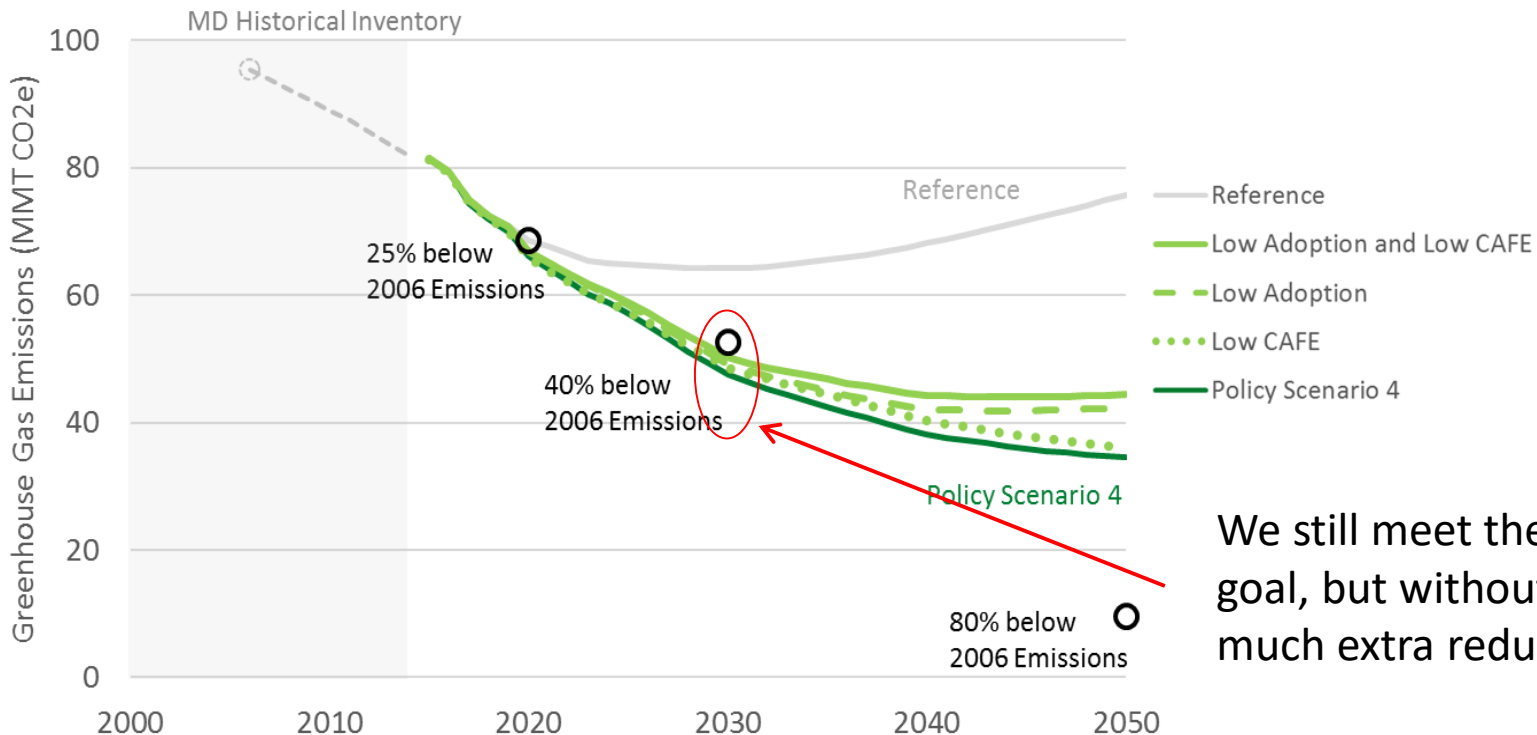
We still meet the 2030 goal, but without as much extra reduction.

Long Term Goals

MDE analyzed a scenario that achieves 80% reduction by 2050 ("Scenario 2")

Important long-term measures included: renewable natural gas, other advanced biofuels, electric or other zero-emission heavy trucks and non-road vehicles.

Long Term Challenges

Scenario 2 identified important long-term measures that should be re-evaluated as technologies mature, but are currently expensive.
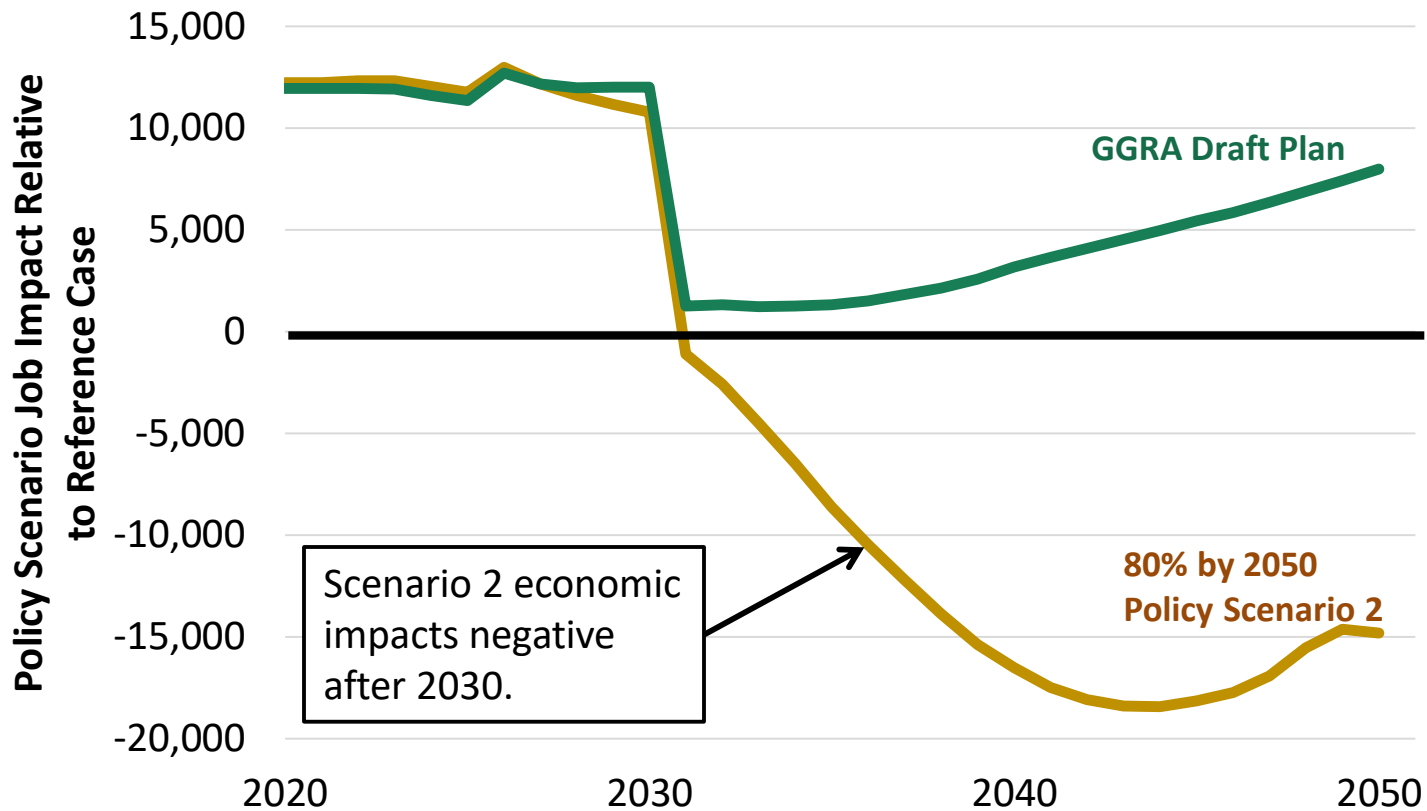
These measures may be necessary for deeper reductions, and may be cost-effective when the time comes. In the meantime, the Draft Plan focuses on measures necessary for 2030.

Public Comment & Outreach

- 2019 Draft Plan out for comment now:
  mde.maryland.gov/ClimateChange

- MDE held series of meetings around the state:
  - 12/3: Chesapeake College, Queenstown
  - 12/17: MDE HQ, Baltimore
  - 1/10: Frostburg State University, Frostburg
  - 1/14: Charles County Govt Building, La Plata
  - 1/29: Webinar
  - 1/31: MDE HQ, Baltimore
  - 2/12: Webinar
  - 3/4: Webinar

- Details and registration at: mde.maryland.gov/ClimateChange

- Email written comments to: christopher.beck@maryland.gov